

Modernization and Characterization of the Riga SLR Timing System

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A huge push towards modernization is underway at the Riga SLR station. One of the systems under refurbishment is the timing system. This presentation compares the past and present timing systems. A new documentation effort has been started to facilitate traceability and easier maintenance. The new frequency standard is a GPS steered rubidium. A stability analysis of this source was completed using a cesium clock equipped with a high-performance tube, and compared to measurements of the previous standard. Measurements have been performed to validate the timing offset relative to the event timer measurement. These changes should greatly improve confidence in the quality of the data collected.

Most of the timing equipment is located in a separate building from the telescope and ranging equipment. The time signals are delivered via a run of coaxial cable. There are plans to replace these cables with fibers in the future to reduce jitter and any temperature dependence. A measurement and analysis of the variation in signal delay with respect to temperature is also presented.